

# Electron Ion Collider: Realization: Staged Approach

## *Introduction*

Abhay Deshpande  
Stony Brook University & RBRC  
EIC meeting at LBL  
December 2008

- Staged approach to EIC=eRHIC came about because of some exciting developments in the area of Stochastic Cooling of RHIC beams: Cooling of RHIC beams expected ~5 years ahead of time, ~5 times cheaper
- Could the savings be used for something else? BNL management requested input from the BNL Collider Accelerator Division (CAD) if a piece of EIC=eRHIC could be built (Winter 2007)

- The BNL CAD has come up with preliminary ideas about this
- Because of the attractiveness of this option for the realization, the EIC Collaboration requested a similar consideration from Jlab, accelerator division in mid-2008
- The status of these design ideas and their limitations will be presented today by V. Litvinenko (BNL) and G. Krafft (Jlab)

# Considerations

- Staged approach to EIC realization very attractive:
  - Fraction of the money
  - Earlier
- Is the physics compelling?
- Can it really “**evolve**” in to the final EIC design?  
**With minimal waste of money and equipment?**
- Could the **detector also evolve** with the collider?
- What are the limits of this mutually dependent issues?
- Many of these and such questions are now being considered. Some preliminary ideas of physics were discussed in ECT\* Trento, in an EIC WS. More are developing. A summary in T. Horn’s talk today

# Beyond today:

- The physics case has to be studied carefully and sharpened
- The design ideas have to be addressed with some detail including: accelerator, IR and detector considerations including its impact on the physics of the “Stage 1”.
- A serious attempt at preliminary cost estimate has to be made in the next few months
  - In the case of ELIC-Stage-1 this also means an estimate of the ELIC cost, although very preliminary